Dart Aerospace Ltd.

Date: Wednesday, 1/25/2006 1:14:58 PM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	**Drawing Name**	: 206L FWD X-TUBE
Job Number	: 25604		
Estimate Number	: 10553		
P.O. Number	:	**Part Number**	: D206667103
This Issue	: 1/25/2006 **S.O. No.** :	**Drawing Number**	: D206-667-143 REVB
Prsht Rev.	: NC	**Project Number**	: N/A
First Issue	: / / **Type** : LANDING GEAR	**Drawing Revision**	: B
Previous Run	: 21488	**Material**	:
Written By	:	**Due Date**	: 2/28/2006 **Qty:** 1 **Um:** Each
Checked & Approved By	: 06.01.27		
Comment	: Est Rev:F 05.09.01 Add holes for compatibility with Bell Skidtubes KJ/JLM		

Additional Product

Job Number:

Seq. #:	**Machine Or Operation:**	**Description :**
1.0	DC	DOCUMENT CONTROL

Comment: DOCUMENT CONTROL
Photocopy bluefile and create labels as per PPP D206-667-103 CHG002

2.0	D6002115	Crosstube material

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Pick:
Qty Part number Description Batch
1 D6002-115 Crosstube B1951
Check OD = 2.250"; ID = 1.750" MS 06/02/24 1

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE

Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA087 MS 06/02/24 1

2-Turn first side as per Folio FA087 MS 06/02/24 1

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143. BG 06-02-25 1

4.0	QC1	INSPECT ALL DIM TO DIM SHEET

Comment: INSPECT ALL DIM TO DIM SHEET BG 06.02.25 1

 Form: rprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ________________ **PAR #:** ______ **Fault Category:** ________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevD

Date: Wednesday, 1/25/2006 1:14:58 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** 206L FWD X-TUBE

Job Number: 25604 **Part Number:** D206667103

Job Number:

Seq. #:	Machine Or Operation:	Description :
5.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE

Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA087

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143.

3-Polish entire outside surface of crosstube

4-Remove sand and plugs

5-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 BG 06.02.25 1

Seq. #:	Machine Or Operation:	Description :
6.0	QC1	INSPECT ALL DIM TO DIM SHEET

Comment: INSPECT ALL DIM TO DIM SHEET BG 06.02.25 1

Seq. #:	Machine Or Operation:	Description :
7.0	QC8	SECOND CHECK

Comment: SECOND CHECK J.G 06/02/25 1

Seq. #:	Machine Or Operation:	Description :
8.0	HAND FINISHING1	HAND FINISHING RESOURCE #1

Comment: HAND FINISHING RESOURCE #1
Chemical Conversion Coat as per QSI 005 4.1 M 06 03 02 (1)

Seq. #:	Machine Or Operation:	Description :
9.0	BENDING	BENDING MACHINE

Comment: BENDING MACHINE
Bend tube as per Dwg D206-667-143 using CNC bender program 206L-fw and Folio FT017

Seq. #:	Machine Or Operation:	Description :
10.0	QC6	DIMENSIONAL CHECK

Comment: DIMENSIONAL CHECK

Seq. #:	Machine Or Operation:	Description :
11.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1

Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes in tube using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8541 & DT8542 as per Dwg

 Form: rprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
			Corrective Action Section B					
DATE	STEP	Description of NC Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** 206L FWD X-TUBE

Job Number: 25604 **Part Number:** D206667103

Job Number:

Seq. #:	Machine Or Operation:	Description :

D206-667-143Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8541 & DT8542 as per Dwg D206-667-143

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143.Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-143.

8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.

9-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

Seq. #:	Machine Or Operation:	Description :
12.0	QC5	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP

Seq. #:	Machine Or Operation:	Description :
13.0	HAND FINISHING1	HAND FINISHING RESOURCE #1

Comment: HAND FINISHING RESOURCE #1
Chemical Conversion Coat as per QSI 005 4.1

Seq. #:	Machine Or Operation:	Description :
14.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

Seq. #:	Machine Or Operation:	Description :
15.0	OUTSIDE SERVICE	OUTSIDE SERVICES

Comment: Sub-Contracting OUTSIDE SERVICES
Liquid Penetrant Inspection as per QSI 038Or
Issue P/O:__________LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

Seq. #:	Machine Or Operation:	Description :
16.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Inspect for transit damage
Ensure copy of NDT results attached to work order.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** _________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 1/25/2006 1:14:58 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services
Drawing Name: 206L FWD X-TUBE

Job Number: 25604
Part Number: D206667103

Job Number:

Seq. #:	Machine Or Operation:	Description :
17.0	QC6	DIMENSIONAL CHECK

Comment: Inspect for damage & ensure results are as per Dwg D206-667-103

Seq. #:	Machine Or Operation:	Description :
18.0	SPRAY PAINTING	SPRAY PAINTING

Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

Seq. #:	Machine Or Operation:	Description :
19.0	QC14	Inspect Spray Paint

Comment: Inspect Spray Paint
Wrap in plastic bag to protect from scratches

Seq. #:	Machine Or Operation:	Description :
20.0	D2856400	Abrasion Strip

Comment: Qty.: 1.2138 f(s)/Unit Total : 1.2138 f(s)
Pick:

Qty	Part number	Description	Batch
2	D2856-400(Cut to 6.94")	Abrasion Strip	____________

Seq. #:	Machine Or Operation:	Description :
21.0	D2873043	Nut Plate Assembly

Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Pick:

Qty	Part number	Description	Batch
2	D2873-043	Nut Plate	____________

Seq. #:	Machine Or Operation:	Description :
22.0	D2873045	Nut Plate Assembly

Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Pick:

Qty	Part number	Description	Batch
2	D2873-045	Nut Plate	____________

Form: rprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________ **PAR #:** _______ **Fault Category:** ____________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 1/25/2006 1:14:59 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** 206L FWD X-TUBE

Job Number: 25604 **Part Number:** D206667103

Job Number:

Seq. #:	Machine Or Operation:	Description :
23.0	D28911	Support 2.25 dia

Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Pick:
Qty Part number Description Batch
2 D2891-1 Support ____________

Seq. #:	Machine Or Operation:	Description :
24.0	MS20601AD4W8	

Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)
Pick:
Qty Part number Description Batch
14 MS20601AD4W8 Rivet ____________

Seq. #:	Machine Or Operation:	Description :
25.0	MS2192020	Clamp

Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Pick:
Qty Part number Description Batch
4 MS21920-20 Clamp ____________

Seq. #:	Machine Or Operation:	Description :
26.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1

Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips as per QSI 035 using DT8579. .Note: (3) top holes should be facing up.

2-Install supports and clamps as per Dwg D4206-667-143. Torque clamps to 80-100 in lb

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.

Seq. #:	Machine Or Operation:	Description :
27.0	QC5	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP

Seq. #:	Machine Or Operation:	Description :
28.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Pick Packing Kit

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** _________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
			Corrective Action Section B					
DATE	STEP	Description of NC Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector

NOTE: Date & initial all entries

Date: Wednesday, 1/25/2006 1:14:59 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** 206L FWD X-TUBE

Job Number: 25604 **Part Number:** D206667103

Job Number:

Seq. #:	Machine Or Operation:	Description :
29.0	AN57A	Bolt

Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
10 AN5-7A Bolt ____________

Seq. #:	Machine Or Operation:	Description :
30.0	AN530A	BOLT

Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
4 AN5-30A Bolt ____________

SB 27/2/ 24 Wed

Seq. #:	Machine Or Operation:	Description :
31.0	AN960JD516	Washer

Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
10 AN960JD516 Washer____________

Seq. #:	Machine Or Operation:	Description :
32.0	QC4	INSPECT 100% KITS FOR COMPLETENESS

Comment: INSPECT 100% KITS FOR COMPLETENESS

Seq. #:	Machine Or Operation:	Description :
33.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and pack for shipping as per PPP D206-667-103
Location:____________
PPP Rev:____________

Seq. #:	Machine Or Operation:	Description :
34.0	DC	DOCUMENT CONTROL

Comment: DOCUMENT CONTROL
Inspection Level 21

Job Completion

ce 06-04-20

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** _________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/29/2006 7:48:40 AM
User: Linda Lacelle

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	**Drawing Name**	: 206L FWD X-TUBE
Job Number	: 25604		
Estimate Number	: 10553		
P.O. Number	:	**Part Number**	: D206667103
This Issue	: 3/29/2006 **S.O. No.** :	**Drawing Number**	: D206-667-143 REVB
Prsht Rev.	: NC	**Project Number**	: N/A
First Issue	: 1/25/2006 **Type** : LANDING GEAR	**Drawing Revision**	: B
Previous Run	: 21488	**Material**	:
Written By	: ______________________	**Due Date**	: 2/28/2006 **Qty:** 1 **Um:** Each
Checked & Approved By	: ______________________		
Comment	: Est Rev:F 05.09.01 Add holes for compatibility with Bell Skidtubes KJ/JLM		

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
28.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Pick Packing Kit

29.0	AN532A	Bolt

Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Bolt

30.0	MS21042L5	Nut

Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Nut

31.0	AN57A	Bolt

Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
10 AN5-7A Bolt ____________

32.0	AN530A	BOLT

Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
4 AN5-30A Bolt ____________

Form: rprocess

Date: Wednesday, 3/29/2006 7:48:40 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** 206L FWD X-TUBE

Job Number: 25604 **Part Number:** D206667103

Job Number:

Seq. #:	Machine Or Operation:	Description :
33.0	AN960JD516	Washer

Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
10 AN960JD516 Washer_____________

Seq. #:	Machine Or Operation:	Description :
34.0	QC4	INSPECT 100% KITS FOR COMPLETENESS

Comment: INSPECT 100% KITS FOR COMPLETENESS

Seq. #:	Machine Or Operation:	Description :
35.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and pack for shipping as per PPP D206-667-103
Location:___________
PPP Rev:____________

Seq. #:	Machine Or Operation:	Description :
36.0	DC	DOCUMENT CONTROL

Comment: DOCUMENT CONTROL
Inspection Level 21

Job Completion

Form: rprocess

DART AEROSPACE LTD	Work Order:	25604
Description: Crosstube Assembly (206L High Fwd)	Part Number:	D206-667-143
Inspection Dwg: D206-667-143 Rev: ~~A2~~ B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.244	✓			
	1.982	+0.005/-0.000	1.986	✓			
	2.019	+0.005/-0.000	2.023	✓			
	2.058	+0.005/-0.000	2.062	✓			
	2.097	+0.005/-0.000	2.101	✓			
	2.136	+0.005/-0.000	2.141	✓			
	2.176	+0.005/-0.000	2.180	✓			
	2.201	+0.005/-0.000	2.204	✓			
	0.125	+/-0.010	.130	✓			
	0.400 x 30°	+/-0.010	.400	✓			
	R0.063	+/-0.010	.063	✓			
	R0.500	+/-0.010	.500	✓			
	4.438	+/-0.030	4.438	✓			
SIDE B	104.98	+/-0.020	104.98	✓			
	2.240	+0.005/-0.000	2.244	✓			
	1.982	+0.005/-0.000	1.987	✓			
	2.019	+0.005/-0.000	2.024	✓			
	2.058	+0.005/-0.000	2.063	✓			
	2.097	+0.005/-0.000	2.102	✓			
	2.136	+0.005/-0.000	2.140	✓			
	2.176	+0.005/-0.000	2.180	✓			
	2.201	+0.005/-0.000	2.204	✓			
	0.125	+/-0.010	.125	✓			
	0.400 x 30°	+/-0.010	.400	✓			
	R0.063	+/-0.010	.063	✓			
	R0.500	+/-0.010	.500	✓			
	4.438	+/-0.030	4.438	✓			

Measured by:	BG	Audited by:	J.G	Prototype Approval:	N/A
Date:	06.02.25	Date:	06/02/25	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.05.06	New Issue (P/O D206-667-103)	KJ/RF	

DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED DS	APPROVED DS	DRAWING NO. D206-667-143 REV. B SHEET 1 OF 3
DATE 05.07.26		TITLE CROSSTUBE ASS'Y (206L HIGH FWD) SCALE NTS

A	00.11.17	NEW ISSUE
B	05.07.26	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKIDTUBES

RELEASED 05-07.26

Qty	Part Number	Description
X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
1	D6002-115	CROSSTUBE
2	D2873-043	NUT PLATE
2	D2873-045	NUT PLATE
2	D2856-400-694	ABRASION STRIP
2	D2891-1	SUPPORT
14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
4	MS21920-20	CLAMP

GENERAL NOTES:

1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2) MATERIAL: MANUFACTURED FROM D6002-115
   FINISHED LENGTH = 104.98±0.020
3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
   PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
   PAINT OUTSIDE PER DART QSI 005 4.2
4) PART IS SYMMETRIC ABOUT CENTERLINE.
5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD BE SMOOTH.
6) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
9) INSTALL D2856-400-694 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2891-1 SUPPORT, PER QSI 035.
10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
11) IT IS OPTIONAL TO SEAL EDGES OF SUPPORTS AND ABRASION STRIP USING SIKAFLEX-241/291 SEALANT.
12) TORQUE CLAMPS 80 TO 100 IN-LB.